

BACKLIGHT FOR A COLOR LCD

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ABSTRACT OF THE DISCLOSURE

In one embodiment, a color, transmissive LCD uses red, green, and blue LEDs as the light source. The red LED is optically coupled to a first edge of a rectangular light guide; the green LED is optically coupled to a second edge of the light guide; and the
10 blue LED is optically coupled to a third edge of the light guide. Three sets of deformities in the light guide selectively direct the R, G, and B light out of the front surface of the light guide. The R, G, and B LEDs are constantly on and there is no color filtering. In another embodiment, a blue light LED is optically coupled to one or more edges of a light guide, and phosphor strips are placed on a surface of the light guide coinciding with
15 the red and green pixel columns. Deformities below the red and green phosphor strips and below the blue pixel areas direct blue light to the backs of the phosphor strips and to the blue pixel areas. If an ultraviolet light LED is used, phosphor strips for the blue pixel areas would also be used.